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ABSTRACT

Vocational education and training in Finland consists of prevocational education at the preprimary and comprehensive school levels and formal vocational training at the secondary and postsecondary levels. Prevocational education aims to foster children's harmonious personality development by integrating handicraft and practical subjects teaching to preprimary and comprehensive school curricula. Formal vocational education at the secondary and adult education levels is directed toward contributing to economic development. Problems of the present vocational education system include the following: (1) the demand for an educated labor force cannot be met in all fields; (2) opportunities for further education do not match young people's preferences; and (3) distinctions between academic and vocational education are too sharp. The practice of adult vocational education has been guided by the principles of educational equality and continuous education. Issues for further educational development are reorganization of upper secondary schooling to integrate vocational and academic education and creation of new forms of postsecondary and occupational higher education. The main goals of the new vocational education reform are further broadening of vocational skills and opening of educational channels from vocational education to higher education and universities. (Appendixes include 19 references and statistics and information on the structure of the Finnish educational sytem.) (Author/YLB)

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# VOCATIONAL EDUCATION AND TRAINING
# TRENDS IN FINLAND

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# VOCATIONAL EDUCATION AND TRAINING TRENDS IN FINLAND

## Synopsis

Finnish vocational education and training has followed two kinds of schooling policies: vocational-liberal education and efficiency-oriented occupational training. Prevocational education has aimed to foster children's harmonious personality development by integrating handicraft and practical subjects teaching to preprimary and comprehensive school curricula. Formal vocational education at the secondary and adult education levels has been directed to contribute to the economic development. Partly, due to the effective vocational training system, Finland's economical development has been very progressive since the Second World War. Efficiency in vocational training has also resulted in problems. Now Finnish vocational education faces the future challenges of promoting gender equality, reforming secondary level schooling, and developing occupational higher education.

Vocational education and training trends in Finland are approached from two aspects: prevocational education at the preprimary and comprehensive (primary and middle school) school levels, and formal vocational training at the secondary and post-secondary levels. The main goals of prevocational education through handicrafts and arts teaching have aimed to foster balanced personality growth and to promote positive values and attitudes development towards skills training, working life and national culture. Handicraft teaching has provided chances to train pupils' eyes, hands, brain, mind and heart together. Enriching the use of hands combined with promotion of practical reasoning skills has been considered to expand a larger utilization of the human brain. Hands can be seen as extensions of the brain. The most popular prevocational subjects have been woodwork, needlework and home economics.

Unlike the Greek and Roman nations, Teutonic and Finnish tribes and nations valued work as an honorable vocation for a free human being (Kyöstiö, 1954). Households during the period of primary production were self-sufficient with their supplies and ingredients. As a result of the shift from self-sufficiency to specialization of

production the households started to buy and change their supplies and tools instead of making themselves. Specialization of making certain tools and supplies led to the birth of vocations. Before any artisan and vocational schools were established in Finland, there were a great number of tradesmen in various fields. The know-how was passed from fathers to sons and from mothers to daughters, or skills were acquired through apprenticeship. Artisan schools basically for towns-people were changed into vocational schools at the end of the nineteenth century. The World Wars boomed the heavy industries and establishment of vocational schools and sub-degree level institutes.

The trends in philosophical guidelines of vocational education and training have turned from goal-oriented humanism to vision-oriented humanism in prevocational education and from efficiency-oriented training to vocational-liberal education in formal vocational training (Anttila, 1991; Kivirauma, 1990; Kyöstiö, 1954; Mäenpää, 1991; Peltonen, 1991). Uno Cygnaeus (+1888), a Finnish pedagogist and internationally recognized as a philosopher of handiwork teaching, represented the goal-oriented perspective of education.

Uno Cygnaeus based his perspective of the handiwork teaching on the tradition of Finnish popular woodwork, sloyd, which used to be a domestic spare-time activity (Bennett, 1937; Kyöstiö, 1954). Cygnaeus also applied Pestalozzi's and Fröbel's doctrines while determining work instruction. The function of work instruction was to motivate pupils, to foster coordination between eyes and hands, to teach youngsters to understand and value manual work and Finnish culture, to support household's economy, to develop dexterity, initiative, systematicality, carefulness and diligence (Kyöstiö, 1954; 1955).

Oiva Kyöstiö was an educator who conceptualized formal vocational training in the 1950s which was the period of establishing many vocational schools. He got influences from a German educator, Kerschensteiner who, for his part, borrowed Dewey's thinking. According to Kyöstiö (1955), beside supporting national economy, vocational training had a great educational value in the areas of attitudes and social education, by supporting self-esteem and self-realization.

Formal vocational education has traditionally had quite utilitarian goals in practice. Since the 1980s most vocational lines led to dead-ends without chances for further education. Vocational and academic schooling have been distinctly separated from each other. However, vocational students' numbers have increased, and their basic educational level has significantly improved during the past two decades. Today vocational and technical education curricula contain general education subjects, general vocational education subjects, specialized vocational training and work practice which

are included in all vocational students' study programs. In the 1990s, vocational education reforms in Finland are directed to integrate general and vocational schooling at the secondary level, and to develop occupational higher education by establishing occupational colleges.

## Prevocational Education in Finland

Handiwork teaching has been unique and strong in Finland. This tradition has enriched the Finnish culture, especially concerning the arts and crafts, industrial production, architecture and environment shaping. Uno Cygnaeus, also the founder of Finnish primary school education, added handiwork teaching to the comprehensive school curricula in the nineteenth century. Since the 1860s all Finnish citizens have studied handiwork during their compulsory school years.

Today handiwork is also taught in the kindergartens and preschools. Children, both girls and boys, are guided to have various experiences of touching raw materials and of making products in the areas of needlework, woodwork, metal work, horticulture and home economics. Children may have chances to visit their parents' jobs, too.

The subjects studied in the comprehensive school (six years plus three years) are defined in the Comprehensive School Act and Decree. The Government decides the distribution of lesson hours between subjects. At the lower stage (grades one to six) handicraft is taught from two to four hours per week. The upper stage (grades seven to nine) curriculum includes the common core and elective subjects. In the seventh grade, both home economics and technical and textile work are taught three hours a week. In the eighth and ninth grades, elective subjects are technical work, textile work, home economics, agriculture, forestry and horticulture, and typing or keyboarding. Prevocational subjects in the comprehensive school are taught by subjects teachers who have specialized in them in their teachers' training programs. Orientation to working life consists of a two-week period of assisting work in two different jobs in the ninth grade.

The pedagogical perspectives of teaching handiwork have been developed in the universities which provide handicraft teachers' training programs. Theories of handicraft teaching have been based on, among others, the tradition of the Finnish handiwork, cognitive psychology and perception theories (Anttila, 1991; Peltonen, 1991; Tuomikoski, 1991). Traditionally handiwork teaching has been based on the following arguments (Tuomikoski, 1991):

- Handicraft learning advances step by step and inductively. General processes of work and production become comprehensible for pupils. Analyzing concrete results and

effects of actions promotes the development of reasoning skills . Empowerment through doing and thinking shows how persons are able to improve their environments and the world.

- Uniqueness of human beings can be strengthened by working with hands. Because human actions are mostly intentional, they differ from the nature's causal series of events. Handicrafts learning makes persons to get used to the intentional processes through deliberating upon the goals of action and to implement them.
- Human nature can be holistically fostered by doing handicrafts. Fragmentation of learning could be avoided by making a whole product.
- Processes of making by hands enrich imagination development. Students are guided to make a mental image and idea of the result of a work and of the means to reach it at the beginning of a making process. While progressing one could verify the accuracy of the original ideas.
- Working by hands develops positive self-esteem and meets the human demand for action.

From the point of view of educational goals and aims, the perspective of cognitive psychology in handiwork instruction refers to students' abilities to learn to form a schema for implementing situational actions. Social and motivational factors are shaping these schemes for actions. Students should learn to use mental images with which they can further define their thoughts and turn them to action schemes (Anttila, 1991). The conceive theory of handicraft instruction is based on perceiving logic. Students should learn to perceive certain project visions based on those logic necessary for handicraft actions. There are several kinds of logic in production: imitation logic, construction and composition logic, skill logic, product development logic etc. The goal of learning is to cope with a production event by taking into account preparation, situational analyses and factors for success. Students also have to learn to test and approve a product and to analyze its environmental effects (Peltonen, 1991). The cognitive theory represents a subgroup of perceiving logic. Perceiving is based on a kind of a pattern or model. Therefore, the ideas of the cognitive theory are included in the conceive theory of handiwork teaching.

## Formal Vocational Training

The organized guild system started formal vocational training in Finland in the seventeenth century (Kivirauma, 1990). Skilled tradesmen were in great demand. Sunday schools, which were later called artisan schools, were established in the 1830s with the purpose to teach basic skills and to control townspeople. Besides skills

training, reading, writing, computation and religion were taught in those schools. Apprentices and journeymen had to participate in the all-around education offered by artisan schools in the evening and Sundays.

By 1800 the need for organized training had become evident. The first field to provide training was that of handicrafts. Spinning schools, though sporadic, were established for the purposes of textile industry in the 1750s (Kivirauma, 1990; Kyöstiö, 1955). One of the first fields to offer planned and continuous training, which has lasted until now, was seafaring. The Turku navigation school was founded in 1813. It was also in Turku where a commercial school was founded in 1839. After the launching of these pioneer projects, training was soon expanded in most vocational fields (Isosaari, 1973; Nurmi, 1984). For instance, the first agriculture and husbandry school was established in 1840, the medical service school in 1867, and the home economics school in 1891 (Nurmi, 1984).

Vocational schools with many fields based on the occupational structure of the Finnish society had been founded since 1900. Discussions of defining and grouping occupational fields started in the 1790s (Kivirauma, 1990).

Vocational and technical training institutes providing diversified occupational fields and chances became available for the rural population in the 1940s, when central comprehensive vocational schools were established in all parts of Finland. Industrial occupational areas were mostly represented in vocational and technical education from 1950 to 1980. Since 1980 a half of the vocational education openings have been directed to service areas.

College-level (post-secondary) occupational training has had higher status than school-level training. Especially the fields of technology, business and medical service have been valued greatly (Kivirauma, 1990). Since 1950 college-level occupational training has consisted of one third of all vocational students.

Up to the 1960s Finland was an agrarian-dominant country. Since then the structure has changed sharply: industry and services started to expand at the same time. More population has gone straight from primary production into services than in other Western countries. Rapid economic growth in the 1980s has put pressure on the Finnish industry to develop high technology at the expense of basic industry. Training requirements and standards have increased, and the gap between the qualifications for blue- and white-collar occupations have narrowed.

As a result of expanded industrialization in the 1950s and 1960s, many vocational institutes were established side by side, but separately, with an increased number of the academic lower and upper secondary schools (Mäkinen, 1991). The nine-year comprehensive school was reformed in the 1970s. The vocational education system

was reformed in the 1980s and is continuing in the 1990s. Vocational education was made parallel to the upper-secondary (high school) level which followed after the nine-year comprehensive school. The academic secondary line attracts students more than the vocational one. At present about 60% of the age cohort (sixteen-year olds) choose academic upper secondary school (Ministry of Education, 1990). However, there are university study places only for about 30% of students who have passed the matriculation examination.

The problems of the present vocational education system are as follows (Mäenpää, 1991):

- The demand for educated labor force cannot be met in all fields.
- The opportunities available for further education after the comprehensive and upper secondary schools do not match with young people's preferences.
- There exist too sharp distinctions between academic and vocational education.
- Vocational education is too much differentiated.
- Too small units cause inefficiency.
- Administration has been too far centralized.

## Adult Education

As structural changes took place in the Finnish society, and automation and technical advances affected the nature of work, it was necessary to retrain the middle-aged and older workers in order to meet the needs of the labor market. Labor market training traces back to the 1930s when courses were offered to unemployed women, young people and clerical workers. The aim of these courses was to improve the training opportunities for the unemployed and unskilled workers. The legislation on employment courses in 1965 and 1970 enabled the establishment of vocational adult education centers (Pohjonen, 1991).

Practice of vocational adult education has been guided by the principles of educational equality and continuous education. The main idea has been that basic training should also be available for those persons who have not had a chance to receive vocational education earlier in their lives. At the end of the 1980s such persons still accounted for 39% of the total adult population (Salminen, 1991).

## Conclusions

The Ministry of Education has raised the system level discussion whose main themes concern organization, structure and contents of upper secondary school (vocational

and academic high school) and occupational higher education. The main issues of further educational development are: (a) How to reorganize upper secondary schooling in order to integrate vocational and academic education; and (b) How to create new forms of post-secondary and occupational higher education which followed after upper secondary education (nine years comprehensive and three years upper secondary school) (Mäkinen, 1991).

As a result, new experiments of high school and occupational higher education will start in 1992. The main goals of the new vocational education reform in the 1990s are as follows (Mäenpää, 1991):

1. Further broadening of vocational skills.
2. Vocational or/and academic education for all youngsters after comprehensive school.
3. Opening educational channels from vocational lines to higher education and universities.

The tendency of vocational education development has progressed from narrow skill training to vocational-liberal education with increased chances for further education. The trend in vocational education administration is proceeding from a highly centralized system to a decentralized one.

The real reforms of occupational secondary and higher education levels also require renewal of teaching theories and practices (Ekola, 1990; Ekola & Rantanen, 1988). Development of teachers' pedagogical thinking and action faces the challenges of broadening as well.

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# APPENDICES

## BASIC STATISTICS AND STRUCTURES OF FINNISH EDUCATIONAL SYSTEM

## FINLAND IN BRIEF

The Republic of Finland, with its area of 338,000 square kilometres, is the sixth largest country in Europe, and apart form Iceland, the northernmost country in the world. Forests are its principal natural resource. The cultivated area (8%) is almost equal to that covered by inland waters (10%), while forests (65% of natural terrain) and marshy land dominate the landscape.

After six centuries of Swedish rule and one century of Russian domination, Finland gained independence in 1917. After the second world war, Finland adopted a determined and active policy of neutrality and friendly interaction in her political, sociocultural and economic relations with other nations.

Finland has a population of 4.9 million, with an average density of 16 inhabitants per square kilometre. Half of the population live in one tenth of the total area in the south. About 60 per cent of the population live in urban areas. Finland has undergone a rapid process of urbanization and a change in occupational structure since 1950.

Finland has two official languages: Finnish and Swedish, spoken by a minority of 6 per cent. Finland has two state churches: the Evangelical-Lutheran Church (89%) and the Orthodox Church (1%).

Finland has a unicameral parliament of 200 members elected by and from citizens over 18. The present members of Parliament represent eight parties and one non-party grouping (the Greens). The President of the Republic wields supreme executive power and appoints the government.

Finland has mixed economy based on free enterprise and private ownership with considerable state input in planning and financing in many sectors. The main industries are wood, metal, food products and chemicals. Foreign trade makes up one third of the gross national product. In 1987 the percapita GNP was USD 14,370. The unemployment rate in 1987 was 5.1%. (Ministry of Education, 1990).

Figure 4. Distribution of funds by sectors in the state budget 1990 (%)

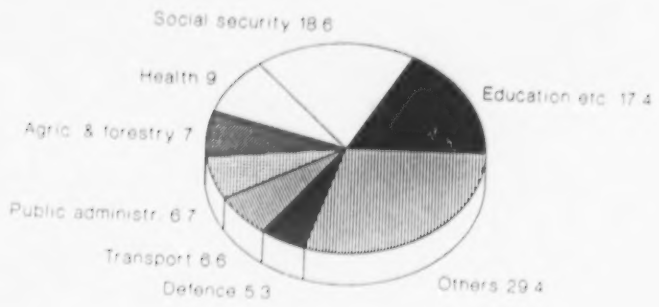
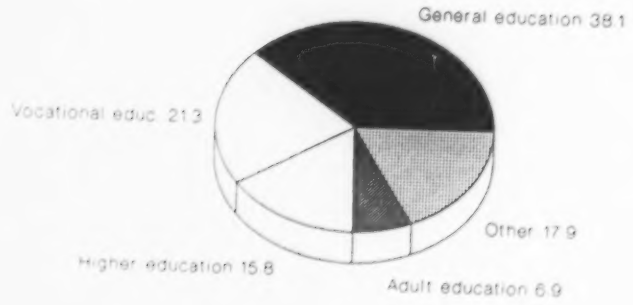





Figure 5. Educational costs in the 1990 state budget (%)

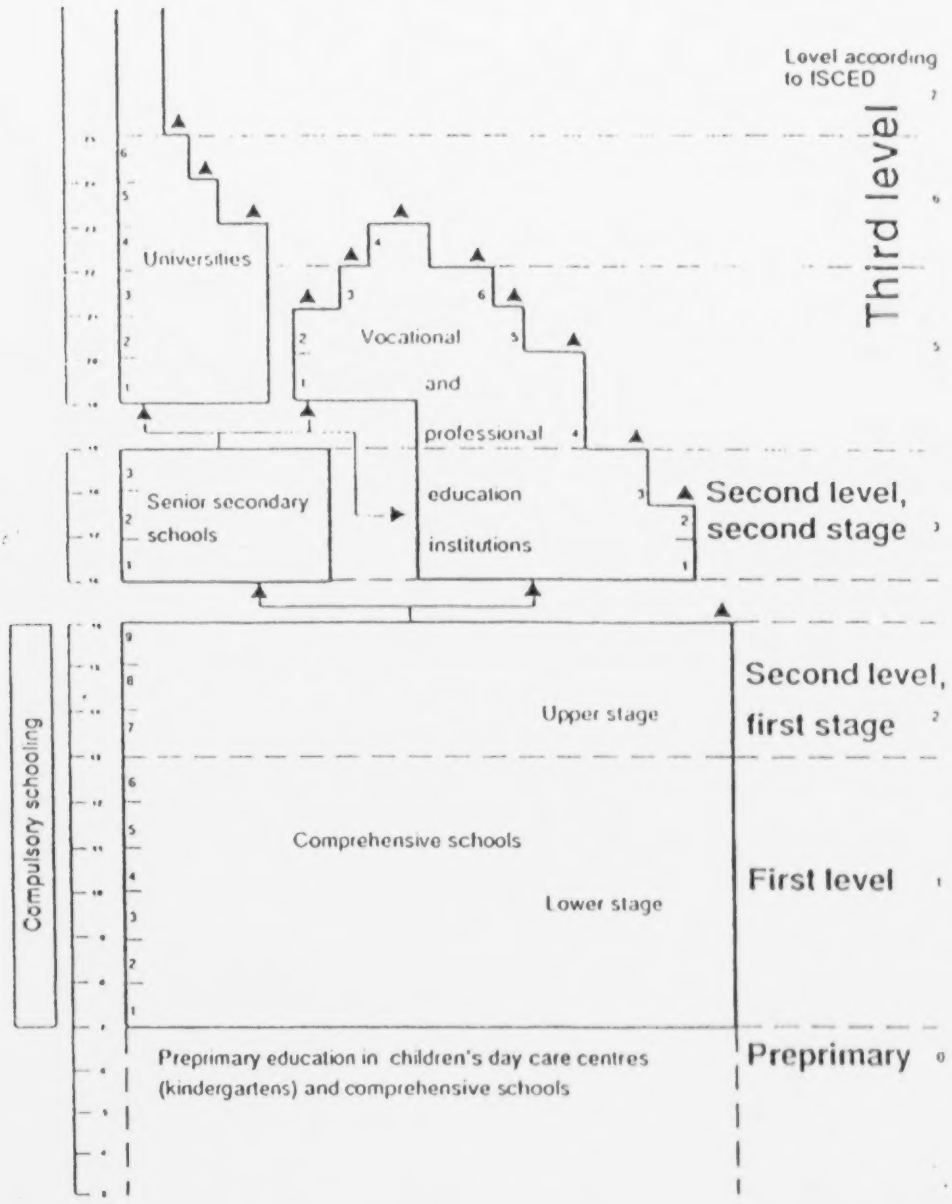



(Ministry of Education, 1990)

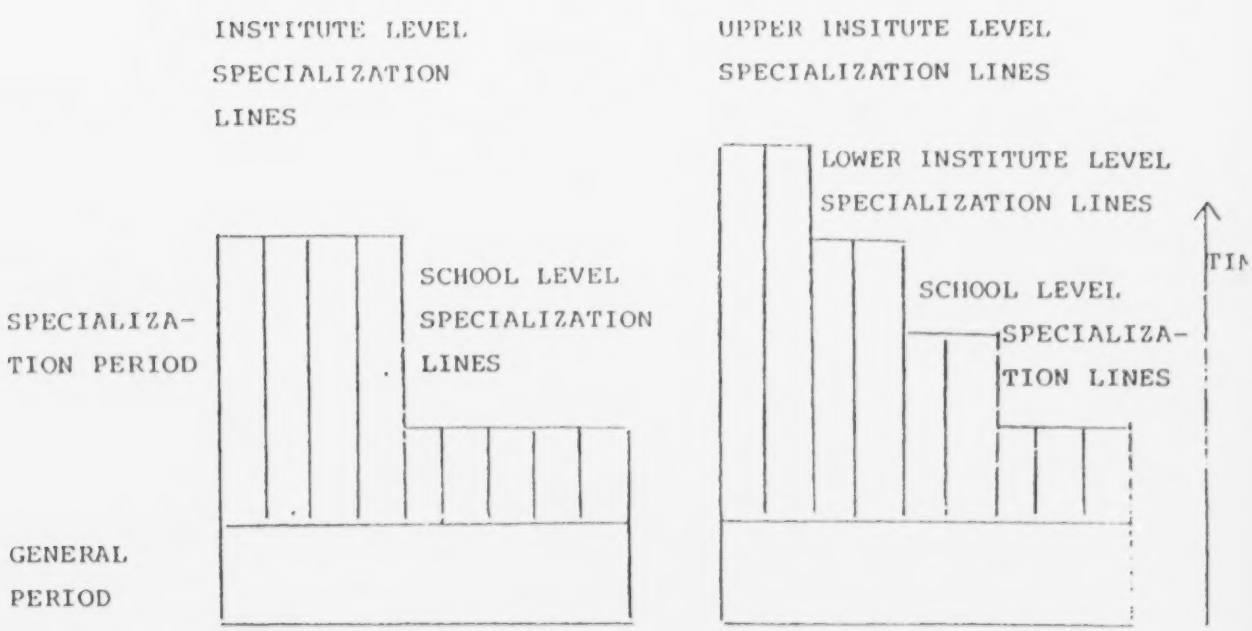
Table 1. Breakdown of the educational spending in 1989 and 1990 state budget proposals

| Form of education | 1989 | 1990 |
|---|---|---|
| General education | 38.5% | 38.1% |
| Vocational education | 21.1% | 21.3% |
| Higher education | 15.1% | 15.8% |
| Adult education | 7.3% | 6.9% |
| Other | 18.0% | 17.9% |
| Total | 100.0% | 100.0% |

# The Regular Education System of Finland



## THE TWO TYPES OF BASIC LINES

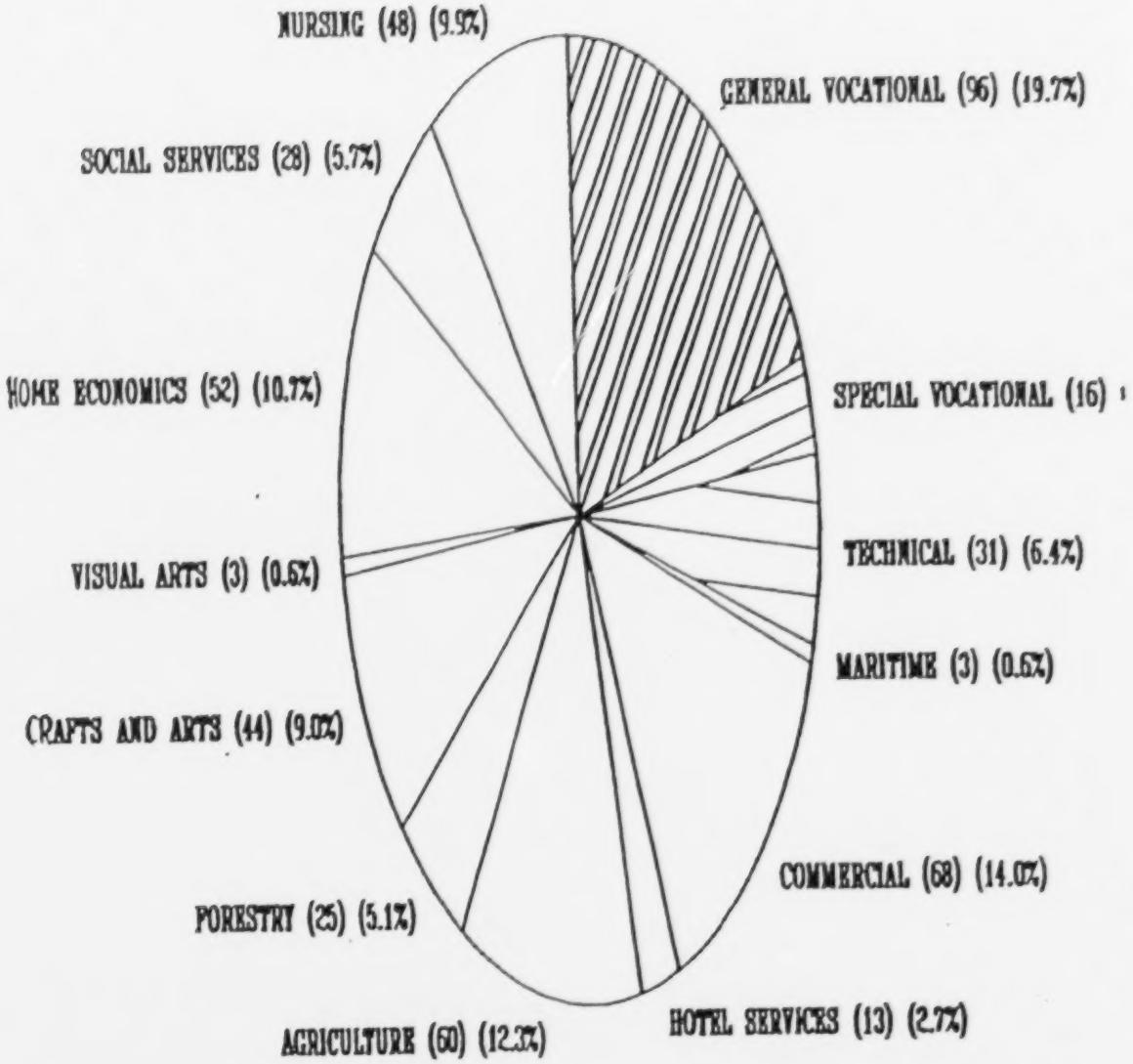



BASIC LINE WITH ONE STEP AT THE INSTITUTE LEVEL: MAIN MODEL

BASIC LINE WITH TWO STEPS AT THE INSTITUTE LEVEL

# TYPES OF VOCATIONAL INSTITUTIONS

Total of 487 Institutions 1989



| BASIC LINES | NUMBER OF SPECIALIZATION LINES |
|---|---|
| AGRICULTURE | 14 |
| HORTICULTURE | 5 |
| DAIRYING | 3 |
| FISHERIES | 5 |
| FORESTRY | 9 |
| HANDICRAFTS AND INDUSTRIAL ARTS | 15 |
| GARMENT TRADE | 9 |
| TEXTILES | 4 |
| PRINTING AND GRAPHICS | 4 |
| HWA-TECHICS | 5 |
| MECHANICAL ENGINEERING | 12 |
| ELECTRICAL ENGINEERING | 9 |
| AUTOMOBILES AND TRANSPORT | 10 |
| SURVEYING | 3 |
| CONSTRUCTION | 12 |
| WOOD TECHNOLOGY | 8 |
| SURFACE TREATMENT | 4 |
| CHEMICAL ENGINEERING | 8 |
| FOOD INDUSTRY | 7 |
| HOTEL AND CATERING SERVICE | 8 |
| HOME AND INSTITUTIONAL ECONOMICS | 8 |
| SEAFARING | 6 |
| COMMERCE AND ADMINISTRATION | 14 |
| HEALTH CARE | 18 |
| SOCIAL SERVICES | 7 |

TYPES OF VOCATIONAL INSTITUTIONS

| | NUMBER OF INSTITUTIONS | NUMBER OF STUDENTS |
|---|---|---|
| 1. GENERAL VOCATIONAL INSTITUTIONS | 96 | 43 850 |
| 2. HOTEL AND CATERING INSTITUTIONS | 13 | 3 100 |
| 3. COMMERCIAL INSTITUTIONS | 68 | 30 900 |
| 4. HOME AND INSTITUTIONAL ECONOMIC INST. | 52 | 5 050 |
| 5. VISUAL ARTS INSTITUTIONS | 3 | 100 |
| 6. CRAFTS AND INDUSTRIAL ARTS INSTITUTIONS | 44 | 5 200 |
| 7. AGRICULTURAL INSTITUTIONS | 60 | 5 400 |
| 8. MARITIME INSTITUTIONS | 3 | 450 |
| 9. FORESTRY INSTITUTIONS | 25 | 2 650 |
| 10. SOCIAL SERVICE INSTITUTIONS | 28 | 7 800 |
| 11. TECHNICAL INSTITUTIONS | 31 | 20 300 |
| 12. NURSING INSTITUTIONS | 48 | 23 600 |
| 13. SPECIAL VOCATIONAL INSTITUTIONS | 16 | 1 800 |
| TOTAL | 487 | 150 200 |
| 14. SPECIALIZED VOCATIONAL INSTITUTIONS | 57 | 1 600 |
| 15. VOCATIONAL COURSE CENTRES | 42 | (30 000) |

| BASIC LINES | NUMBER OF OPENINGS 1990 |
|---|---|
| AGRICULTURE | 3 120 |
| HORTICULTURE | 630 |
| DAIRYING | 70 |
| FISHERIES | 70 |
| FORESTRY | 1 400 |
| HANDICRAFTS AND INDUSTRIAL ARTS | 1 750 |
| GARMENT TRADE | 1 380 |
| TEXTILES | 90 |
| PRINTING AND GRAPHICS | 380 |
| HWA-TECHICS | 1 050 |
| MECHANICAL ENGINEERING | 5 400 |
| ELECTRICAL ENGINEERING | 5 260 |
| AUTOMOBILES AND TRANSPORT | 3 250 |
| SURVEYING | 270 |
| CONSTRUCTION | 3 080 |
| WOOD TECHNOLOGY | 1 150 |
| SURFACE TREATMENT | 380 |
| CHEMICAL ENGINEERING | 1 130 |
| FOOD INDUSTRY | 790 |
| HOTEL AND CATERING SERVICE | 4 480 |
| HOME AND INSTITUTIONAL ECONOMICS | 2 570 |
| SEAFARING | 150 |
| COMMERCE AND ADMINISTRATION | 11 860 |
| HEALTH CARE | 7 560 |
| SOCIAL SERVICES | 3 680 |

## OPENINGS OF VOCATIONAL AND PROFESSIONAL EDUCATION 1990

| | |
|---|---|
| VOCATIONAL EDUCATION | 68 500 |
| APPRENTICESHIP | 1 500 |
| UNIVERSITIES | 14 000 |
| TOTAL | 84 000 |
| AVERAGE AGE GROUP 16 - 18 | 59 000 |
| OPENINGS/AGE GROUP % | 142,4 |

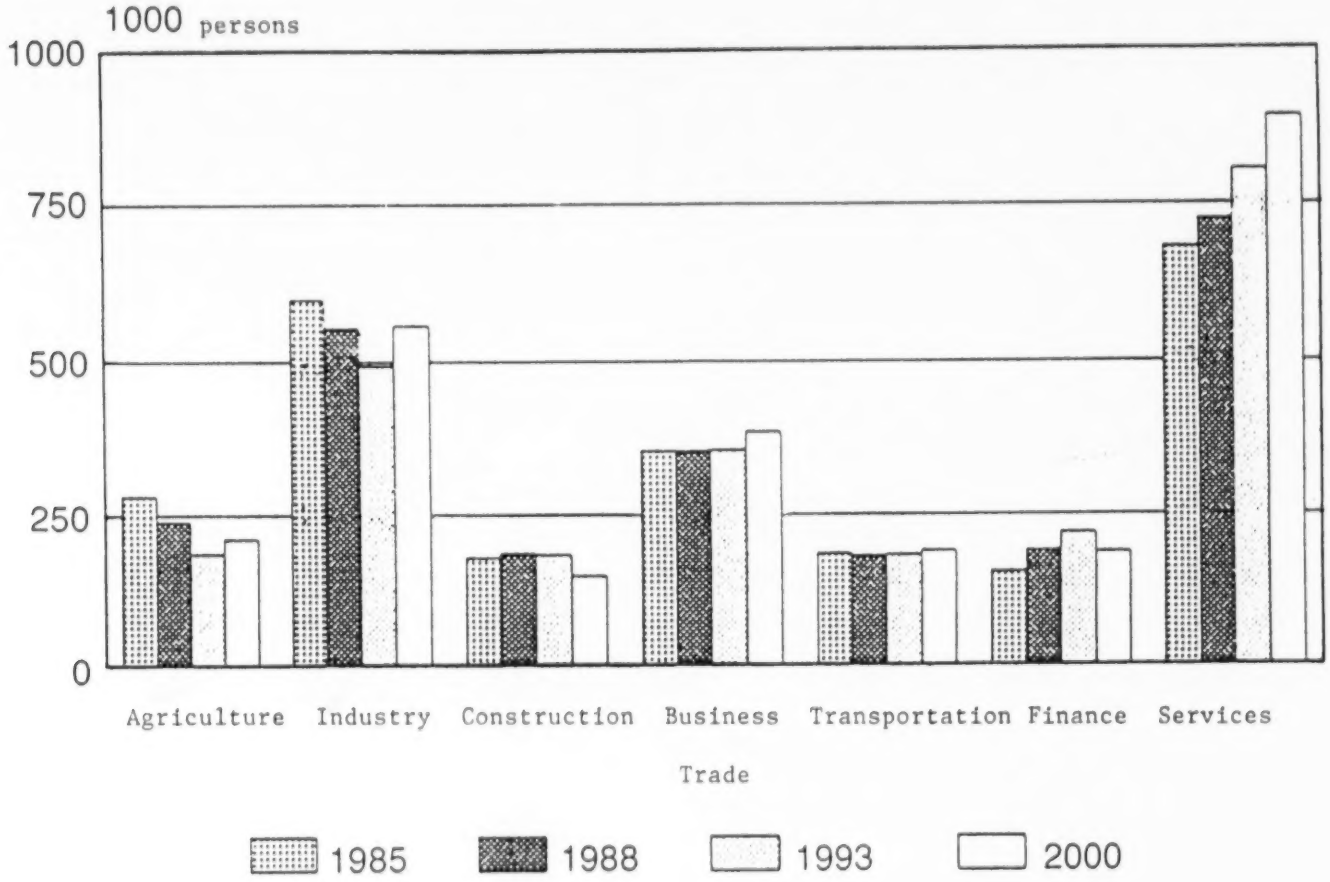



Figure 1. Employment by trades in 1985-1988 and forecasts in 1993 and 2000 (1000 persons) (Vuorinen, 1990).